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L2: Entry 5 of 5

File: DWPI

Apr 6, 1999

DERWENT-ACC-NO: 1999-281744

DERWENT-WEEK: 200108

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TITLE: Wafer washing apparatus using ultrasonic waves - has ultrasonic oscillator which vibrates cleaning liquid and vibration horns that vibrate wafer in two directions

INVENTOR: KOBAYASHI, K; KUBOTA, T ; KUDO, J ; YAMAGUCHI, M ; YOSHIHARA, S

PATENT-ASSIGNEE:

ASSIGNEE

CODE

TDK CORP

DENK

PRIORITY-DATA: 1997JP-0210196 (July 22, 1997)

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PATENT-FAMILY:

| | PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|--------------------------|-------------------------------|-------------------|----------|-------|------------|
| <input type="checkbox"/> | JP 11090366 A | April 6, 1999 | | 005 | B08B003/12 |
| <input type="checkbox"/> | US 6178974 B1 | January 30, 2001 | | 000 | B08B003/12 |
| <input type="checkbox"/> | SG 69322 A1 | December 21, 1999 | | 000 | B08B003/12 |
| <input type="checkbox"/> | US 6085764 A | July 11, 2000 | | 000 | B08B003/12 |

APPLICATION-DATA:

| PUB-NO | APPL-DATE | APPL-NO | DESCRIPTOR |
|--------------|---------------|----------------------------|------------|
| JP 11090366A | May 26, 1998 | 1998JP-0160012 | |
| US 6178974B1 | June 17, 1998 | 1998US-0098751 | Div ex |
| US 6178974B1 | May 17, 2000 | 2000US-0572227 | |
| US 6178974B1 | | US 6085764 | Div ex |
| SG 69322A1 | June 23, 1998 | 1998SG-0001485 | |
| US 6085764A | June 17, 1998 | 1998US-0098751 | |

INT-CL (IPC): [B06 B 1/18](#); [B08 B 3/12](#); [H01 L 21/304](#)

ABSTRACTED-PUB-NO: JP 11090366A

BASIC-ABSTRACT:

NOVELTY - A wafer (15) is immersed in cleaning liquid (11) in a washing tank (10). An ultrasonic vibrator (12) in the tank, vibrates the cleaning liquid and

ultrasonic vibration horns (13,14) vibrate the wafer in two directions. DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for wafer washing method.

USE - In cleaning wafer by ultrasonic waves.

ADVANTAGE - Cleaning effect is improved greatly, and the polish sediment and the scum of wafer are removed efficiently. DESCRIPTION OF DRAWING(S) - The figure shows the block structure of washing machine. (10) Washing tank; (11) Cleaning liquid; (12) Ultrasonic vibrator; (13,14) Ultrasonic vibration horns; (15) Wafer.

ABSTRACTED-PUB-NO:

US 6085764A

EQUIVALENT-ABSTRACTS:

NOVELTY - A wafer (15) is immersed in cleaning liquid (11) in a washing tank (10). An ultrasonic vibrator (12) in the tank, vibrates the cleaning liquid and ultrasonic vibration horns (13,14) vibrate the wafer in two directions. DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for wafer washing method.

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US 6178974B

NOVELTY - A wafer (15) is immersed in cleaning liquid (11) in a washing tank (10). An ultrasonic vibrator (12) in the tank, vibrates the cleaning liquid and ultrasonic vibration horns (13,14) vibrate the wafer in two directions. DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for wafer washing method.

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CHOSEN-DRAWING: Dwg.1/1

TITLE-TERMS: WAFER WASHING APPARATUS ULTRASONIC WAVE ULTRASONIC OSCILLATOR
VIBRATION CLEAN LIQUID VIBRATION HORN VIBRATION WAFER TWO DIRECTION

DERWENT-CLASS: P43 U11 V06

EPI-CODES: U11-C06A1B; V06-B03; V06-D;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N1999-211339

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